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(54) Title: BLOCK COPOLYMER COMPOSITIONS, HAVING IMPROVED MECHANICAL PROPERTIES AND PROCESSABILITY

(57) Abstract: A composition to be used for the manufacture of mono-or multilayer films for food-wrap applications comprising from 5 to 40 wt% of a styrenic block copolymer, a polyolefin in an amount of at least 40 wt% and optionally a resin which is compatible with the hydrogenated poly(butadiene) blocks of the styrenic block copolymer in an amount of from 0 to 25 %wt, wherein all weight percentages are relative to the weight of the complete composition; a styrenic block copolymer to be used in said composition, and mono-or multilayer films comprising said composition.

INTERNATIONAL SEARCH REPORT

Application No
PCT/EP 03/00278

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C08L53/02 C08F297/04 B32B27/32

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C08L C09D C09J C08F C09K B32B G09F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, X	WO 02 28965 A (KRATON POLYMERS RES B V ;HANDLIN DALE LEE JR (US); DJIAUW LIE KHON) 11 April 2002 (2002-04-11) * (same applicant, same invention - invalid present application priority date) ;pg.2, line 30- pg.3, line 2 ;claims 1-8 ;pg.5, line 16-32 ;pg.4, line 29- pg.5, line 15 ;examples ;pg.10, line 22-23 * page 6, line 22 -page 8, line 5; claim 8 ----	1-4
X	US 5 346 964 A (SHIBATA TOORU ET AL) 13 September 1994 (1994-09-13) * column 7, line 30, particularly "films, sheets" ; column 1, line 61 - column 2, line 1; column 2, line 31-38; column 3, line 9-12, 40-44; column 3, line 55 - column 4, line 6 ; abstract * column 7, line 44-49, 51-59 ----- -/-	1-4

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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G document member of the same patent family

Date of the actual completion of the international search

8 January 2004

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Publication No
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 061 099 A (KUREHA CHEMICAL IND CO LTD) 20 December 2000 (2000-12-20) * claims 1,2,4,3-17, particularly films and laminated films ; page 4, line 9-31, 42-57 ; page 2, line 1-8 * abstract ---	1-4
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X	EP 0 863 193 A (SHELL INT RESEARCH) 9 September 1998 (1998-09-09) * page 6, line 2, particularly "food and beverage containers"; abstract; page 2, line 29-49, 52-54; page 3, line 54-56; page 4, line 29-34 * page 4, line 29-34 ---	1
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Y	EP 0 413 262 A (KURARAY CO) 20 February 1991 (1991-02-20) * abstract * page 3, line 1-50 ---	1-4
A	EP 0 822 227 A (SHELL INT RESEARCH) 4 February 1998 (1998-02-04) * page 2, line 46-56 * page 3, line 1-8; table 1 ---	1-3
A	US 5 627 235 A (HIMES GLENN R) 6 May 1997 (1997-05-06) * column 1, line 10-13; column 1, line 60 - column 2, line 5 ; column 2, line 55-65* abstract; table 1 ---	1-3
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INTERNATIONAL SEARCH REPORT

Application No
PCT/EP 03/00278

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 01 19919 A (SHELL INT RESEARCH) 22 March 2001 (2001-03-22) * abstract ; claims * -----	1-3
A	EP 0 254 346 A (SHELL INT RESEARCH) 27 January 1988 (1988-01-27) * claims 1-10 ; abstract * -----	1-3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP 03/00278

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☒ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

1-4

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-3

A composition suitable for the manufacture of a monolayer, or of multilayer films for food-wrap applications. The said composition comprising from 5 to 40 wt.% of a styrenic block copolymer of either molecular structure S-EB-S ... (1), or of molecular structure (S-EB)_nX ... (2) as described in the application claim 1 ; a polyolefin in an amount of at least 40 wt.% ; and optionally 0-25 %wt. of a resin which is compatible with the hydrogenated poly(butadiene) blocks, wherein all wt.% are relative to the weight of the complete composition.

2. Claim : 4

A monolayer film, or a multilayer film comprising at least one layer based on a composition according to any one of the claims 1-3.

3. Claims: 5-8

A styrenic block copolymer as described in application claims 5-8.

INTERNATIONAL SEARCH REPORT

Inventor's name
PCT/EP 03/00278

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